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SQUARE D. COMPANY, LEGAL DEPT. IP SECTION
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EXAMINER

TORRES, JOSEPH D

ART UNIT PAPER NUMBER

2133

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,604

Applicant(s)

WHITE ET AL.

Examiner

Joseph D. Torres

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8,17-22,24-28 and 37-44 is/are pending in the application.
- 4a) Of the above claim(s) 37-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,17-22 and 24-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I (claims 1, 2, 4-8, 17-22 and 24-28) in the reply filed on 10/14/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
Claims 37-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/14/2005.

Drawings

2. The drawings were received on 08/01/2005. These drawings are accepted.

Response to Arguments

3. Applicant's arguments with respect to claims 1, 2, 4-8, 17-22 and 24-28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 2, 4-8, 17-22 and 24-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 17 recite, "retransmitting a first type of messages and shortening the length of the first type of messages, **without at least one of retransmitting and shortening the length of a second type of messages**" [Emphasis Added].

The term "without at least one of" is indefinite. The Examiner assumes the following was intended --retransmitting a first type of messages and shortening the length of the first type of messages different from the block length of originally transmitted messages--.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dintelmann; Friedrich et al. (US 6256496 B1, hereafter referred to as Dintelmann) in view of Labonte; Sylvain et al. (US 5828672 A, hereafter referred to as Labonte).

35 U.S.C. 103(a) rejection of claims 1, 17 and 18.

Dintelmann teaches detecting an error (col. 5, lines 55-56 in Dintelmann); and based on the residual error probability (col. 5, line 62 in Dintelmann), retransmitting a first type of messages and altering the length of the first type of messages different from the block length of originally transmitted messages (col. 5, lines 59-62 in Dintelmann; col. 6, lines 44-45 in Dintelmann teach that block size is also altered responsive to reduced capacity utilization, which clearly suggests reducing block size to meet reduced capacity utilization).

However Dintelmann does not explicitly teach the specific use of calculating a raw bit error rate and correlating a residual error probability in response to the detected error rate.

Labonte, in an analogous art, teaches use of calculating a raw bit error rate (col. 6, lines 30-39 in Labonte teaches calculating a raw bit error rate) and correlating a residual error probability in response to the detected error rate (col. 6, lines 49-56 teaches a means for correlating the residual error probability to previously calculated BER on only frames that pass the CRC check to produce a residual error probability referred to as residual BER, RBER, in Labonte; Note: errors detected by the CRC check are errors that went undetected by error correction decoder 43 in Figure 4 of Labonte).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dintelmann with the teachings of Labonte by including use of calculating a raw bit error rate and correlating a residual error probability in response to the detected error rate. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of calculating a raw bit error rate and correlating a residual error probability in response to the detected error rate would have provided a means for calculating the bit error rates required in Dintelmann for decisions on retransmission.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 2 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dintelmann; Friedrich et al. (US 6256496 B1; hereafter referred to as Dintelmann) and Labonte; Sylvain et al. (US 5828672 A, hereafter referred to as Labonte) in view of Wicker (Stephen B. Wicker, "Error Control Systems for Digital Communication and Storage", Prentice-Hall, 1995, pages 240-243 & 396-409).

35 U.S.C. 103(a) rejection of claims 2 and 22.

Dintelmann and Labonte substantially teaches the claimed invention described in claims 1 and 17 (as rejected above).

However Dintelmann and Labonte does not explicitly teach the specific use of retransmission.

Wicker, in an analogous art, teaches use of retransmission (Equation 15-2 on page 396 of Wicker teach that the residual error rate for accepting packets $P(E)$ is bound by $P_{ub}(E)/(1 - P_{db}(E))$. Note: $P_e = P_{ub}(E)$ and $P_r = P_{db}(E)$; the last paragraph on page 402 of Wicker teaches retransmission takes place even if a request for transmission has not been received).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dintelmann and Labonte with the teachings of Wicker by including use of retransmission. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of retransmission would have provided additional error correction capabilities for the channel.

7. Claims 5-8, 19-21 and 25-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Dintelmann; Friedrich et al. (US 6256496 B1, hereafter referred to as Dintelmann), Labonte; Sylvain et al. (US 5828672 A, hereafter referred to as Labonte) and Wicker (Stephen B. Wicker, "Error Control Systems for Digital Communication and Storage", Prentice-Hall, 1995, pages 240-243 & 396-409) in view of Mangold; Peter et al. (US 5926232 A, hereafter referred to as Mangold).

35 U.S.C. 103(a) rejection of claims 5 and 6.

Dintelmann, Labonte, Wicker and Mangold substantially teaches the claimed invention described in claims 1 and 2 (as rejected above).

However Dintelmann, Labonte, Wicker and Mangold do not explicitly teach the specific use of Maximum Likelihood filtering to determine residual error rates.

The Examiner asserts that Dintelmann, Labonte, Wicker and Mangold teach a means for determining residual error rates, but do not teach specific hardware for determining residual error rates. One of ordinary skill in the art at the time the invention was made would have been highly motivated to create a specific hardware means for implementing the design in the Dintelmann, Labonte, Wicker and Mangold patents.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Dintelmann, Labonte, Wicker and Mangold by including use of Maximum Likelihood filtering to determine residual error rates. This modification would have been obvious to one of ordinary skill in the art, at

the time the invention was made, because one of ordinary skill in the art would have recognized that use of Maximum Likelihood filtering to determine residual error rates would have provided the opportunity for implementing the design in the Dintelmann, Labonte, Wicker and Mangold patents.

35 U.S.C. 103(a) rejection of claim 7.

The decision to change error correction codes in Mangold is based on changes in residual error rates, hence is substantially based on rate of deterioration of the residual error rates.

35 U.S.C. 103(a) rejection of claim 8.

Dintelmann, Labonte, Wicker and Mangold substantially teaches the claimed invention described in claims 1, 2 and 5-7 (as rejected above).

However Dintelmann, Labonte, Wicker and Mangold do not explicitly teach the specific use of a PID.

The Examiner asserts that using a specific part of a packet to determine residual error rate does not deviate from the scope or the intent of the teachings in Dintelmann, Labonte, Wicker and Mangold since Dintelmann, Labonte, Wicker and Mangold encompass error correction for any and all parts of the packet.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Dintelmann, Labonte, Wicker and Mangold by including use of a PID. This modification would have been obvious to one

of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a PID would have provided the opportunity to correct errors in any or all parts of the packet.

35 U.S.C. 103(a) rejection of claims 19-21.

Dintelmann, Labonte, Wicker and Mangold substantially teaches the claimed invention described in claims 17 and 18 (as rejected above).

However Dintelmann, Labonte, Wicker and Mangold do not explicitly teach the specific use of specific hardware used to determine residual error rates.

The Examiner asserts that Dintelmann, Labonte, Wicker and Mangold teach a means for determining residual error rates, but do not teach specific hardware for determining residual error rates. One of ordinary skill in the art at the time the invention was made would have been highly motivated to create a specific hardware means for implementing the design in the Dintelmann, Labonte, Wicker and Mangold patents.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Dintelmann, Labonte, Wicker and Mangold by including use of specific hardware used to determine residual error rates.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of specific hardware used to determine residual error rates would have provided the opportunity for implementing the design in the Dintelmann, Labonte, Wicker and Mangold patents.

35 U.S.C. 103(a) rejection of claims 25 and 26.

Dintelmann, Labonte, Wicker and Mangold substantially teaches the claimed invention described in claims 17-23 (as rejected above).

However Dintelmann, Labonte, Wicker and Mangold do not explicitly teach the specific use of Maximum Likelihood filtering to determine residual error rates.

The Examiner asserts that Dintelmann, Labonte, Wicker and Mangold teach a means for determining residual error rates, but do not teach specific hardware for determining residual error rates. One of ordinary skill in the art at the time the invention was made would have been highly motivated to create a specific hardware means for

implementing the design in the Dintelmann, Labonte, Wicker and Mangold patents.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Dintelmann, Labonte, Wicker and Mangold by including use of Maximum Likelihood filtering to determine residual error rates. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of Maximum Likelihood filtering to determine residual error rates would have provided the opportunity for implementing the design in the Dintelmann, Labonte, Wicker and Mangold patents.

35 U.S.C. 103(a) rejection of claim 27.

The decision to change error correction codes in Mangold is based on changes in residual error rates, hence is substantially based on rate of deterioration of the residual error rates.

35 U.S.C. 103(a) rejection of claim 28.

Dintelmann, Labonte, Wicker and Mangold substantially teaches the claimed invention described in claims 17-23 and 25-27 (as rejected above).

However Dintelmann, Labonte, Wicker and Mangold do not explicitly teach the specific use of a PID.

The Examiner asserts that using a specific part of a packet to determine residual error rate does not deviate from the scope or the intent of the teachings in Dintelmann, Labonte, Wicker and Mangold since Dintelmann, Labonte, Wicker and Mangold encompass error correction for any and all parts of the packet.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Dintelmann, Labonte, Wicker and Mangold by including use of a PID. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a PID would have provided the opportunity to correct errors in any or all parts of the packet.

8. Claims 4 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dintelmann; Friedrich et al. (US 6256496 B1, hereafter referred to as Dintelmann),

Labonte; Sylvain et al. (US 5828672 A, hereafter referred to as Labonte), Wicker (Stephen B. Wicker, "Error Control Systems for Digital Communication and Storage", Prentice-Hall, 1995, pages 240-243 & 396-409) and Mangold; Peter et al. (US 5926232 A, hereafter referred to as Mangold) in view of Schroeder; Robert Edward et al. (US 5933111 A, hereafter referred to as Schroeder).

35 U.S.C. 103(a) rejection of claims 4 and 24.

Dintelmann, Labonte, Wicker and Mangold substantially teaches the claimed invention described in claims 1, 2, 17 and 18 (as rejected above).

However Dintelmann, Labonte, Wicker and Mangold do not explicitly teach the specific use of ceasing transmission of the message.

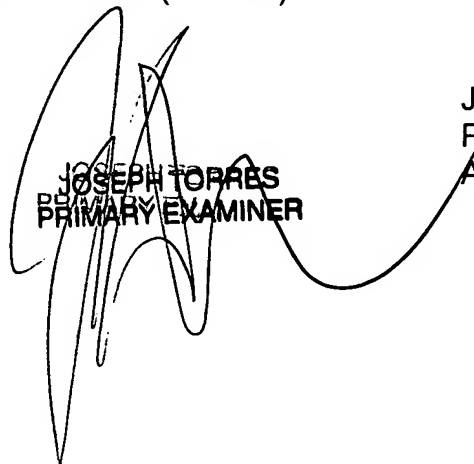
Schroeder, in an analogous art, teaches ceasing transmission whenever an error condition that a corrective action cannot overcome occurs (col. 1, lines 55-58 in Schroeder).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dintelmann, Labonte, Wicker and Mangold with the teachings of Schroeder by including use of ceasing transmission of the message. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of ceasing transmission of the message would have provided the opportunity to abort transmission whenever an error condition that a corrective action cannot overcome occurs (col. 1, lines 55-58 in Schroeder).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JOSEPH TORRES
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